IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of	:	Customer Number: 46320
	:	
David GILGEN, et al.	:	Confirmation Number: 9498
	:	
Application No.: 10/723,979	:	Group Art Unit: 2191
	:	
Filed: November 26, 2003	:	Examiner: A. Deng
	:	

For: FAST DETECTION OF THE ORIGINS OF MEMORY LEAKS WHEN USING
        POOLED RESOURCES

REPLY BRIEF

Mail Stop Appeal Brief - Patents
Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Reply Brief is submitted under 37 C.F.R. § 41.41 in response to the EXAMINER'S

ANSWER dated January 9, 2008.

The Examiner's response to Appellants' arguments submitted in the Appeal Brief of

October 24, 2007, raises additional issues and underscores the factual and legal shortcomings in

the Examiner's rejection.   In response, Appellants rely upon the arguments presented in the

Appeal Brief of October 24, 2007, and the arguments set forth below.

1 <u>Non-Compliant Examiner's Answer</u>

2   At the outset, before addressing the Examiner's response to Appellants' arguments

3 presented in the Appeal Brief, Appellants note that the Examiner has submitted a <u>non-compliant</u>

4 <u>Examiner's Answer</u>. As is evident from the extensive comments presented by Appellants during

5 prosecution of the present Application and in the Appeal Brief, there are questions as to how the

6 limitations in the claims correspond to features in the applied prior art. In this regard, reference

7 is made to M.P.E.P. § 1207.02, entitled "Contents of Examiner's Answer." Specifically, the

8 following is stated:

9   (A) CONTENT REQUIREMENTS FOR EXAMINER'S ANSWER. The examiner's
10 answer is <u>required to include</u>, under appropriate headings, in the order indicated, the following
11 items:
12 …
13   (9)(e) For each rejection under 35 U.S.C. 102 or 103 where there are questions
14 as to how limitations in the claims correspond to features in the prior art even after the
15 examiner complies with the requirements of paragraphs (c) and (d) of this section, the
16 examiner must compare at least one of the rejected claims feature by feature with the
17 prior art relied on in the rejection. The comparison must align the language of the claim
18 side-by-side with a reference to the specific page, line number, drawing reference
19 number, and quotation from the prior art, as appropriate. (emphasis added)
20
21 However, upon reviewing the Examiner's Answer, Appellants note the lack of a section within

22 the Examiner's Answer that meets the requirements described in the aforementioned section.

23 Thus, the Examiner's Answer is non-compliant and further evidences the Examiner's continued

24 failure to clearly identify the features within the prior art being relied upon by the Examiner in

25 rejecting the claims and continued failure to clearly explain the pertinence of the applied prior

26 art, as required by 37 C.F.R. § 1.104(c).

27

28   <u>Rejection under 35 U.S.C. § 101</u>

29   On pages 5-7 of the Appeal Brief, Appellants presented several arguments in response to

30 the Examiner's rejection of claims 7-9 under 35 U.S.C. § 101. Upon comparing the Examiner's

1   statement of the rejection on page 2 of the Second Office Action with the Examiner's statement

2   of the rejection on page 3 of the Examiner's Answer, Appellants are unable to identify any

3   substantive changes and/or additions. The Examiner only response to Appellants' arguments is

4   found on page 13 of the Examiner's Answer in which the Examiner stated "[i]n response to <u>In re</u>

5   <u>Comiskey</u>, it is still under re-hearing." Whether or not <u>In re Comiskey</u> is under rehearing does

6   not permit the Examiner to abrogate the responsibility of addressing the case law, as it currently

7   stands. Moreover, Appellants' Appeal Brief raised additional arguments that were not addressed

8   by the Examiner in the Examiner's Answer.

9

10   <u>Rejection of claim 1 under 35 U.S.C. § 102</u>

11   On pages 8-10 of the Appeal Brief, Appellants addressed the limitation of "*for each*

12   *allocated resource determined to have become overly idle*, <u>reporting an identity of a</u>

13   <u>corresponding one of said calling code segments</u>." Appellants noted that the Examiner failed to

14   consider the claimed invention, as a whole, when the Examiner relied upon Dahlstedt to teach the

15   limitations of the first clause (*in italics*) and Tarditi to teach the limitations of the second clause

16   (<u>underlined</u>). Appellants' position is that the Examiner has failed to establish a common sense

17   rationale for linking these limitations in the manner claimed.

18

19   The Examiner's response to these arguments is found in the paragraph spanning pages 13

20   and 14 of the Examiner's Answer. Specifically, after citing case law not applicable to an "as a

21   whole" analysis, the Examiner asserted the following:

22   Moreover, Dahlstedt teaches a report mechanism that reports information about said links
23   (between said warm and cold object in said memory) for use in determining potential memory
24   leaks (Dahlstedt, [0008]). Dahlstedt dose not *explicitly* teach reporting the an identity of a
25   corresponding one of said calling code segment However, Tarditi teaches reporting an identity of a
26   corresponding one of said calling code segments (Tarditi, FIG. 4, call stack 402 or406, col. 11,

1   lines 10-49, "a live object is an object which has an identifiable pointer in the root set, e.g., call
2   stack402 or 406... for each transition from a GC frame to a non-GC frame in the call stack 402,
3   creation function 304 allocates space on the stack frame for <u>a transition record, e.g., transition</u>
4   <u>records 420 and 424. The transition store select pointer and state information, as well as a pointer</u>
5   <u>to the immediate past transition record, e.g., transition record 424</u>", emphasis added), Tarditi
6   teaches the transition records read on the limitation of reporting an identity of a corresponding one
7   of said calling code segments. Thus, the combination of Dahlstedt and Tarditi does present logical
8   consistency and teaches all the limitations in claim 1 of the present application.
9

10 Appellants do not disagree that Dahlstedt and Tarditi teach the limitations, at issue, individually.

11 Instead, Appellants are arguing that Dahlstedt in view of Tarditi fail to teach the claimed

12 invention, <u>as a whole</u>. In this regard, Appellants respectfully submit that the Examiner's

13 "response" is little more than a slight rephrasing of the statement of the rejection found in the

14 paragraph spanning pages 3 and 4 of the Second Office Action. As such, Appellants' position is

15 that the Examiner has <u>not</u> addressed Appellants' arguments.

16

17   The failure by the Examiner to consider the claimed limitations (and the invention) as a

18 whole is evidenced by the Examiner's failure to establish that the prior art teaches the limitations

19 "for each" and "a corresponding one of" found in the limitation at issue. As already noted above,

20 Tarditi could be considered as teaching identifying call code segments receiving allocated

21 resources. However, the claim recites that a "a corresponding one of" the code segments is

22 reported. This "corresponding one of" limitation, however, is not taught by the combination of

23 Dahlstedt and Tarditi.

24

25   Moreover, the combination of Dahlstedt and Tarditi fail to teach the claimed "for each"

26 limitation. Although Tarditi may identify when an object is considered cold (i.e., object not

27 referenced in a certain period of time, see lines 13-16 of paragraph [0017] of Tarditi), the

28 teachings of Tarditi do not associate each of the objects with corresponding calling code

29 segments when the objects are considered cold (i.e., "for each" .... "a corresponding one of") or

4

1   report these calling code segments. The <u>only</u> apparent way one having ordinary skill in the art

2   could have arrived at the limitations "for each" and "a corresponding one of" is if one having

3   ordinary skill in the art had the benefit of Appellants' disclosure. However, it is impermissible

4   for the Examiner's to establish the rationale to combine certain teachings and to create entirely

5   new limitations based upon Appellants' disclosure alone.

6

7   _____

8   On pages 10 and 11, Appellants also presented arguments as to the Examiner's alleged

9   motivation to modify Dahlstedt in view of Tarditi. Specifically, Appellants argued that the

10   Examiner has failed to establish a nexus between the proposed modifications to Dahlstedt based

11   upon Tarditi and the alleged benefit result from these proposed modifications. As such, one

12   having ordinary skill in the art would not have been realistically impelled to combine Dahlstedt

13   in view of Tarditi in the manner suggested by the Examiner.

14

15   Upon reviewing pages 13-17 of the Examiner's Answer, the Examiner has. apparently.

16   not addressed these arguments.

17

18   <u>Rejection of claim 3 under 35 U.S.C. § 102</u>

19   On page 12 of the Appeal Brief, Appellants argued that claim 3 recites that the detecting

20   and reporting steps are performed in a separate thread of execution and that the applied prior art fails

21   to teach these limitations. The Examiner's response to Appellants' arguments are found in the

22   paragraph spanning pages 14 and 15 of the Examiner's Answer. Notably, the Examiner asserted

1   that "Dahlstedt further teaches **the step of performing said detecting and reporting steps in a**

2   **separate thread of execution**" (emphasis in original).

3

4   Based upon the Examiner's newly presented position, the Examiner appears to by relying

5   upon Dahlstedt instead of Tarditi to teach the limitation at issue. However, the Examiner has

6   already acknowledged that Dahlstedt fails to teach the reporting step (see last 4 lines on page 7

7   of the Examiner's Answer). As such, Appellants are unclear as to how the Examiner can assert

8   that Dahlstedt teaches the claimed "performing said detecting and reporting steps in a separate

9   thread of execution" when the Examiner admits that Dahlstedt fails to teach the reporting step.

10

11   Moreover, the Examiner's alleged reporting step (i.e., step 10) within Dahlstedt is

12   described as displaying an object map showing links for warm clusters to cold clusters. This

13   step, however, is not comparable to the claimed reporting step, which recites "reporting an

14   identity of a corresponding one of said calling code segments." Thus, the Examiner appears to

15   be taking teachings as to an entirely different step (i.e., step 10 of Dahlstedt) and applying this

16   teaching to the alleged reporting step of Tarditi without providing any explanation as to why one

17   having ordinary skill in the art would have been realistically impelled to make such a

18   modification.

19

20   Appellants also note that the Examiner reliance upon Dahlstedt still fails to establish the

21   claimed the detecting and reporting steps are performed in a separate thread of execution for the

22   reasons previously set forth in the Appeal Brief.

23

1   <u>Rejection of claim 5 under 35 U.S.C. § 102</u>

2   On page 13 of the Appeal Brief, Appellants noted that claim 5 recites "performing said

3   detecting and reporting steps responsive to allocating one of said resources in said resource pool"

4   and argued that the applied prior art fails to teach these limitations. The Examiner's response to

5   Appellants' arguments are found on pages 15 and 16 of the Examiner's Answer.

6

7   To be clear, the Examiner has asserted that the detecting step is taught by Dahlstedt, yet the

8   Examiner is relying upon Tarditi to teaching the reporting step. Of note, the Examiner asserted the

9   following in the first full paragraph on page 16 of the Examiner's Answer:

> 10   Dahlstedt's teaching "creating objects in the memory of a run-time environment" read on
> 11   the limitation of **allocating one of said resource resources** [sic] **in said resource pool**, "updating
> 12   the time stamp as each object is accessed or reference, ... and displaying an object map   read on
> 13   the limitation of **detecting and reporting steps responsive to allocating one of said resources in**
> 14   **said resources in said resource pool**; and Tarditi's teaching "the creation function creates a
> 15   transition record on the stack frame of the particular thread in which the function call is identified.
> 16   The transition record is populated with select pointer and state information" that also read on the
> 17   limitations of **the step of performing said detecting and reporting steps responsive to**
> 18   **allocating one of said resources in said resource pool** in claim 5 of the present application.
> 19   (emphasis in original)
> 20

21   Appellants disagree with each of these characterizations of the prior art by the Examiner.

22   Creating objects in memory is <u>not</u> comparable to the claimed allocating one of said resource in a

23   resource pool. These are two completely different steps.

24

25   Moreover, Appellants disagree with the Examiner's assertion that updating a time step

26   and displaying an object map corresponding to the claimed detecting and reporting steps. As

27   noted above, the Examiner has already admitted that Dahlstedt fails to teaching the claimed

28   reporting step. Also, the Examiner's analysis has failed to establish that these steps are

29   <u>responsive to</u> the claimed allocating of the resources in the resource pool.

30

1   Appellants also disagree with the Examiner's reliance upon Tarditi's teaching of creating

2   a transition record to disclose the claimed limitations at tissue. This teaching fails to "read on"

3   either the claimed detecting or reporting steps. Not only has the Examiner failed to establish that

4   these limitations are individually taught by Dahlstedt and Tarditi, the Examiner has failed to

5   establish how one having ordinary skill in the art would have arrived at the claimed limitations

6   recited in claim 3 beyond impermissibly piecing together the separate teachings of Dahlstedt and

7   Tarditi based upon teachings of Appellants' specification.

8

9   <u>Rejection of claim 4 under 35 U.S.C. § 103</u>

10   On pages 14 and 15 of the Appeal Brief, Appellants noted that with regard to claim 4 the

11 Examiner failed to put forth a claim construction to the limitations at issue and argued that the

12 teachings identified by the Examiner are unrelated to the claimed limitations. The Examiner's

13 response to these arguments in found on pages 16 and 17 of the Examiner's Answer and

14 reproduced below:

15   Fu teaches teach **inducing a placebo error condition in close proximity to code for**
16   **allocating said resource** (Fu, FIGS. 5-6, and related text [0042J-[0047], "in decision block 530, a
17   determination is made whether minima point processing subroutine 600 returned an indication of a
18   memory leak. If a memory leak was found, processing proceeds to block 599 where the memory
19   usage processing subrouting 500 ends and a memory leak message is returned to the calling
20   routing subroutine 600 proceeds to decision block 610 where a test is made to determine whether
21   at least four memory usage data minima point were found. If less that four memory leak message
22   data minima points were found, processing proceeds to block 699, where subroutine 600 ends and
23   a memory leak message is returned to the calling routine");
24   In FIGS 5-6 and the related text, Fu basically teaches return an indication of a memory
25   leak in the memory usage to the calling routine (calling code segment) that read on the limitations
26   in claims 4 and 18 in the present application. (emphasis in original)
27
28 Upon reviewing these comments, Appellants note that the Examiner's response is essentially

29 non-responsive. The first paragraph reproduced above is identical to what the Examiner has

30 already asserted (see page 13 of the Second Office Action). The second paragraph is essentially

31 an assertion that Fu teaches reporting a memory leak to a calling routine. This teaching may be

1   relevant to the claimed "detecting memory leaks" step recited in claim 1 but does not appear to

2   have any relevance to the claimed "inducing a placebo error condition is close proximity to code

3   for allocating said resource," as recited in claim 4.

4

For the reasons set forth in the Appeal Brief of October 24, 2007 and for those set forth herein, Appellants respectfully solicit the Honorable Board to reverse the Examiner's rejections under 35 U.S.C. §§ 101-103.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 09-0461, and please credit any excess fees to such deposit account.

Date: March 10, 2008   Respectfully submitted,

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